

**PLASMA IMMERSION ION IMPLANTATION PROCESS USING AN
INDUCTIVELY COUPLED PLASMA SOURCE HAVING LOW
DISSOCIATION AND LOW MINIMUM PLASMA VOLTAGE**

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ABSTRACT

A method for implanting ions in a surface layer of a workpiece includes placing the workpiece on a workpiece support in a chamber with the surface layer being in facing relationship with a ceiling of the chamber, thereby defining a processing zone between the workpiece and the ceiling, and introducing into the chamber a process gas which includes the species to be implanted in the surface layer of the workpiece. The method further includes generating from the process gas a plasma by inductively coupling RF source power into the processing zone from an RF source power generator through an inductively coupled RF power applicator, and applying an RF bias from an RF bias generator to the workpiece support.

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